RINGKASAN

Bawang merah merupakan komoditas hortikultura yang memiliki kandungan gizi dan nilai ekonomis tinggi. Karakteristik rasa dan aroma khas tanaman ini menjadi penyedap rasa/bumbu masakan yang digemari masyarakat. Meningkatnya kepedulian masyarakat akan aspek mutu dan keamanan pangan merupakan perhatian utama dalam produksi sayuran. Salah satu aspek keamanan pangan yaitu produk yang bebas dari kontaminasi logam berat akibat dari penggunaan pupuk dan pestisida sintetik yang berlebihan. Kontaminasi logam berat bersifat racun dan karsinogenik sehingga berbahaya bagi lingkungan dan makhluk hidup. Penelitian ini bertujuan untuk mengetahui pengaruh aplikasi berbagai dosis biochar terhadap karakter fisiologi dan hasil bawang merah, mengetahui pengaruh pemberian berbagai dosis mikoriza terhadap karakter fisiologi dan hasil bawang merah, dan mengetahui pengaruh berbagai dosis biochar dan dosis mikoriza terhadap karakter fisiologi dan hasil bawang merah.

Penelitian dilaksanakan pada bulan April sampai September 2019, di rumah plastik *experimental farm* Fakultas Pertanian, Universitas Jenderal soedirman. Penelitian menggunakan Rancangan Acak Kelompok Lengkap (RAKL) faktorial dengan dua faktor dan tiga ulangan. Faktor pertama yaitu dosis mikoriza yang meliputi 0 g/polibag, 1 g/polibag dan 2 g/polibag. Faktor kedua yaitu dosis biochar yang meliputi 0 t/ha, 2,5 t/ha, 5 t/ha dan 10 t/ha. Variabel yang diamati meliputi tinggi tanaman, total panjang akar, bobot kering akar, laju pertumbuhan tanaman, laju asimilasi bersih tanaman, klorofil daun, persentase infeksi akar, serapan P jaringan tanaman, bobot umbi, bobot tanaman dan indeks panen.

Hasil penelitian menunjukkan bahwa pemberian biochar 2,5 t/ha, 5 t/ha dan 10 t/ha hanya mampu meningkatkan tinggi tanaman dan persentase infeksi akar. Pemberian mikoriza 1 g/polibag dan 2 g/polibag hanya mampu meningkatkan tinggi tanaman, persentase infeksi akar dan serapan P jaringan tanaman. Pemberian biochar dan mikoriza hanya mampu meningkatkan tinggi tanaman dan persentase infeksi akar.

SUMMARY

Shallot is a horticultural commodity that has high nutritional and economic values. Characteristics of taste and distinctive aromas of this plant in flavoring/spice cuisine make people like it. Increased public awareness of aspects on food quality and safety is a major attention in vegetable production. One aspect of food safety is free heavy metal contamination products. This problem raise due to excessive use of synthetics fertilizer and pesticide. Heavy metal contamination is toxic and carcinogenic so it is hazardous to environment and living things including human. This study aims were to know effect of the application of various biochar dosage on the physiological characters and shallot yield, effect ofthe application of various mycorrhiza dosage on the physiological characters and onion yield, and both effects of various dosages of biochar and mycorrhiza on physiological characteristics and shallot yield.

The study was conducted from April to September 2019, at experimental farm screen house of the Faculty of Agriculture, Jenderal Soedirman University. The study used a factorial Complete Randomized Block Design (RCBD) with two factors and three replications. Factor of mycorrhiza dosage viz. 0 g/polybag, 1 g/polybag and 2 g/polybag and biochar dosage viz. 0 t/ha, 2.5 t/ha, 5 t/ha and 10 t/ha were tested with three replication. The observed variables were plant height, total root length, root dry weight, plant growth rate, net assimilation rate of plants, leaf chlorophyll, percentage of root infection, plant tissue P uptake, tuber weight, plant weight and harvest index.

The results showed that the application of biochar 2.5 t/ha, 5 t/ha and 10 t/ha had been able to increase plant height and percentage of root infection. The application of mycorrhiza 1 g/polybag and 2 g/polybag had been able to increase plant height, percentage of root infection and plant tissue P uptake. The both applications of biochar and mycorrhiza had been able to increase plant height and percentage of root infection.